

REMARKS

In view of the following remarks, the Examiner is respectfully requested to withdraw the rejections and allow Claims 1-10 and 17-26, the only claims pending and currently under examination in this application.

Formal Matters

Claims 1-10 and 16-26 are pending after entry of the amendments set forth herein, of which claim 16 is withdrawn.

Claims 1-10 and 17-26 were examined. Claims 1-10 and 17-26 were rejected and claims 3-5 and 19-21 were objected to. No claims were allowed.

Claims 3-5 and 19-21 have been amended to address the Examiners objection for failing to italicize the species/family name in the claims.

The specification has been amended on page 39 in order to address the Examiner's objection regarding sequence identification numbers.

As the above amendments introduce no new matter to the application, their entry is respectfully requested.

Certification Regarding Sequence Listing

I hereby certify that the enclosed Sequence Listing is being submitted under 37 CFR §§ 1.821(c) and (e) in paper and computer readable form (Compact Disk labeled 'CRF').

As required by 37 CFR 1.821(f), I hereby state that the content of the paper and computer readable copy of the Sequence Listing, submitted in accordance with 37 C.F.R. §1.821(c) and (e) are the same. The Computer Readable Format (CRF), being submitted under 37 CFR §§ 1.52(e) and 1.824, is formatted on IBM-PC, the operating system compatibility is MS-Windows and the file listing is:

Seqlist.txt 29 KB created March 15, 2005.

I hereby certify that the enclosed submission includes no new matter. The Sequence Listing was prepared with the software FASTSEQ, and conforms to the Patent Office guidelines. Applicant respectfully submits that the subject application is in adherence to 37 CFR §§ 1.821-1.825.

Priority

The Office Action asserts that the provisional applications 60/356,225, 60/383,336 and the non-provisional application 09/976,673 "provide support for nucleic acid molecules encoding a polypeptide products comprising a first and second chromo/fluorescent domain" (Office Action, page 2). In addition, the Office Action further asserts that claims that cite "nucleic acid molecules encoding a polypeptide product comprising a first and second chromo/fluorescent domain that are form Cnidarian species, e.g., Anthozoan species are only supported in PCT/US02/32560" (Office Action, page 2). However, the Applicants respectfully disagree.

The Applicants note that provisional applications 60/356,225 and 60/383,336, the non-provisional application 09/976,673, as well as in PCT/US02/32560 all disclose polypeptide product comprising a first and second chromo/fluorescent domain that are form *Cnidarian* species.

In particular, provisional application 60/356,225 provides on page 34, line 30 through page 35, line 8, and Figure 1, a working example describing Cr-44-9-tandem (linked dimer), a nucleic acid encoding a first and second chromo/fluorescent domain from a Cnidarian species. Provisional application 60/383,336 provides on page 34, line 30 through page 41, lines 18-30, and Figures 1 and 3, a working example describing a Cr-44-9-tandem (linked dimer) and a HcRed-cr-1 tandem. Non-provisional application 09/976,673 provides on page 40, lines 18-23, and Figures 12 and 3, a working example describing a Cr-44-9-tandem (linked dimer) molecule. In addition, PCT/US02/32560 provides on page 48, lines 5-11, and Figures 12 and 3, a working example describing a Cr-44-9-tandem (linked dimer) molecule.

Therefore, the Applicants are indeed entitled to an earliest priority date of October 12, 2001, the filing date of non-provisional application 09/976,673.

Withdrawal of Objections and Rejections

The Applicants express gratitude in the Examiner's indication that objections and rejections not repeated from the Office Action dated August 24, 2004, have been withdrawn.

Objection to the Specification

The specification has been objected to for disclosing a sequence on page 9 without a specific sequence identifier. The specification has been amended on page 39 in order to address the Examiner's objection. Accordingly, this objection may be withdrawn.

Objections to the Claims

Claims 1-3 and 19-21 have been objected for failing to italicize the species/family name in the claims. In view of the amendments to the claims, this objection may be withdrawn.

Rejection under 35 U.S.C. § 112, first paragraph (Written Description)

Claims 3-4 and 19-21 have been rejected under 35 U.S.C. § 112, first paragraph, for allegedly lacking written description. This rejection is respectfully traversed as applied and as it may be applied to the pending claims.

The law is clear that, if a person of ordinary skill in the art would have understood the inventor to have been in possession of the claimed invention at the time of filing, even if not every nuance of the claims is explicitly described in the specification, then the adequate written description requirement is met.¹ Further, "an applicant ...is generally allowed claims, when the art permits, which cover more than the specific embodiment shown."²

¹ *In re Alton* 76 F.3d 1168, 37 USPQ2d 1578 (Fed. Cir. 1996).

² *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 93 F.3d 1572, 40 USPQ2d 1019 (Fed. Cir. 1996).

The Applicants maintain that the specification provides adequate written description support for such a disclosure. In particular, the Applicants respectfully submit that the specification provides abundant written description support for practicing the claimed invention. In particular, the Applicants note that the specification provides support for the subject nucleic acids at, for example, on page 9, line 3 through page 17, line 15; the particular first and second domain aspect at, for example, on page 9, line 3 through page 10, line 17; exemplary methods of producing mutants at, for example, on page 18, lines 26, through page 19, line 13; constructs, vectors, expression cassettes, and expression systems including the subject nucleic acids at, for example, on page 15, line 16, through page 18, line 25; and applications using the subject interconverted mutants at, for example, on page 28, line 16, through page 36, line 20.

Furthermore the specification provides working examples demonstrating exemplary mutagenesis protocols for generating the subject nucleic acids encoding the polypeptides comprising a first and second chromo/fluorescent domain, wherein the chromo/fluorescent domains are chromo-or fluorescent proteins from a *Cnidarian* species or mutants of chromo-or fluorescent proteins from a *Cnidarian* species (Example I, page 37), and exemplary methods of generating and testing such peptides (pages 37 to 43).

As noted by the Examiner in the Office Action, the pending claims are not limited to particular types of mutations, e.g., point mutations or single deletions, but encompass different types of mutations that result in the mutants of chromo-or fluorescent proteins from a *Cnidarian* species. The Applicants maintain that by showing specific examples of nucleic acids encoding polypeptides comprising a first and second chromo/fluorescent domain, wherein the chromo/fluorescent domains are chromo-or fluorescent proteins from a *Cnidarian* species or mutants of chromo-or fluorescent proteins from a *Cnidarian* species (Example I, and pages 37 to 43), as well as providing a thorough description of DNA mutagenesis methods suitable for use with the present application (page 18, lines 26, through page 19, line 13), the Applicants have provided adequate written descriptive support for the scope of the claims.

In view of the above, it is submitted that the claims do comply with the written description requirement in that the claims are directed to nucleic acids encoding polypeptides comprising a first and second chromo/fluorescent domain, wherein the chromo/fluorescent domains are chromo-or fluorescent proteins from a *Cnidarian* species or mutants of chromo-or fluorescent proteins from a *Cnidarian* species. The specification provides multiple representative examples, including working examples of representative nucleic acids encoding exemplary mutant proteins, such that one of skill in the art would have no doubt that the applicant was in possession of the invention as claimed at the time the application was filed.

Rejection Under 35 U.S.C. § 102

Claims 1-10 and 17-26 have been rejected under 35 U.S.C. §102(b) for allegedly being anticipated by Lukyanov et al., WO 01/27150 ("Lukyanov et al."). In view of the remarks made herein this rejection is respectfully traversed as applied and as it may be applied to the pending claims.

The Applicants note that while the Office Action rejects Claims 1-10 and 17-26 under U.S.C. § 102(b), the more appropriate rejection is under 35 U.S.C. § 102(a). In particular, Lukyanov et al. was not published more than one year prior to the earliest priority date of the present application. Lukyanov et al. was published on April 19, 2001, and, as noted in greater detail above, the earliest priority date of the present application is October 12, 2001. Accordingly, since Lukyanov et al. was published less than one year prior to the earliest priority date of the present application, the cited reference is only available as art under 35 U.S.C. § 102(a).

The present invention is directed to a nucleic acid encoding a polypeptide product comprising a first and second chromo/fluorescent domain, wherein said first and second chromo/fluorescent domains associate with each other under intracellular conditions so that said encoded polypeptide assumes a tertiary structure.

In contrast, the cited reference Lukyanov et al., discloses nucleic acids encoding chromo/fluoroprotein mutants that exhibit different spectral properties than the wild-type chromo/fluoroprotein. Lukyanov et al. is silent as to polypeptides comprising a first and second chromo/fluorescent domain.

It is well established that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987), cert. denied, 481 U.S. 1052 (1987). See also, Scripps Clinic and Research Foundation v. Genentech, Inc., 18 USPQ 2d 1001 (Fed. Cir. 1991).

Since Lukyanov et al. fails to teach nucleic acids encoding polypeptides comprising a first and second chromo/fluorescent domain, the cited reference fails to disclose every element found in the claims of the present invention. As such, Claims 1-10 and 17-26 are not anticipated by the cited reference. Therefore, the Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

In view of the above remarks, this application is considered to be in good and proper form for allowance and the Examiner is respectfully requested to pass this application to issuance.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815.

Respectfully submitted,

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